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Operational Preparation Hindered By Tactical Training

A Monograph
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Second Term 90-91

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	07/05/91	MONOGRAPH

4. TITLE AND SUBTITLE
OPERATIONAL PREPARATION HINDERED BY TACTICAL TRAINING.

5. FUNDING NUMBERS

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
SCHOOL OF ADVANCED MILITARY STUDIES
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FORT LEAVENWORTH, KANSAS 66027-6900
COM (913) 684-3437 AUTOVON 552-3437

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

SEE ATTACHED

14. SUBJECT TERMS
OPERATIONAL PLANNING; TACTICAL TRAINING
OPERATIONAL/TACTICAL LINKAGE

15. NUMBER OF PAGES
50

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNLIMITED

ABSTRACT

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The CINC executes US operational war preparation through the design of operational plans (OPLAN) and contingency plans (CONPLAN). These plans provide the basis for tactical planning for tactical units likely to be assigned to the CINC for execution of his plans in crisis or war. Based on the probable missions derived from these plans, US Army tactical units, that are not forward deployed, are required to establish Mission Essential Task Lists (METL). A unit's METL consists of a short list of essential tasks to focus a unit's training to increase task proficiency. Ideally the METL should reflect the tasks required to win battles and engagements in support of the CINC's operational plans. In reality, however, METL tasks are oriented on generic tasks not linked to the CINC's operational plans.

This monograph focuses on the critical linkage between operational planning and tactical training. An examination of several classical and contemporary theorists emphasize the importance of this linkage. Four historical case studies explore the combinations of operational and tactical success and failure to demonstrate that tactical training either hindered or facilitated operational proficiency. The criteria used are the Operational Operating Systems defined in TRADOC Pam 11-9.

This study concludes that the CINC's should possess the authority for training oversight and METL approval over tactical units likely to execute their operational plans. National security documents can prioritize CINC's according to regional threats to US national security interests. This prioritization is critical as our force structure is reduced and each tactical unit, not forward deployed, will have planning considerations in a multitude of operational plans. The CINC with priority could insure that tactical preparation supports his operational plan prior to a crisis or war.

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Accepted this 13th day of May 1991

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I. INTRODUCTION

> Preoccupied with the myriad problems of the D-Day landing, American leaders had failed to see the battlefield in depth and had paid little attention to the potential problems of hedgerow combat. As early as 8 June [1944], General Bradley called the Bocage the "damndest country I've seen."[1]

General Bradley's comment represents precisely the problem confronting the operational commander in preparing to execute an operational plan. The operational commander uses his **means** to achieve his **ends**. His **means**, the joint forces under his control, consist of tactical units that "translate combat power into victorious battles and engagements."[2] The "strategic goals" assigned to his theater of operations define his **ends**, or the military conditions he is required to achieve.[3] How he uses his **means** to achieve his **ends** determines his **ways** or methods.

The operational commander conducts his ends, ways, and means analysis by answering the three questions central to operational design. These three questions follow.

> (1) What military condition must be produced in the theater of war or operations to achieve the strategic goal (ends)?[4]
>
> (2) What sequence of actions is most likely to produce that condition (ways)?[5]
>
> (3) How should the resources of the force be applied to accomplish the sequence of actions (means)?[6]

The operational commander chooses his means or methods based on the natural interaction between the three levels of war. The three levels of war are defined as follows.

> Strategic Level of War. The level of war that a nation or group of nations determines national or alliance security objectives and develops and uses national resources to accomplish those objectives. Activities at this level establish national and alliance military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of power; develop theater or global war plans to achieve those objectives; and provide armed forces and other capabilities in accordance with the strategic plan.[7]
>
> Operational Level of War. The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or areas of operation. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time and space than do tactics; they ensure the logistic and administrative support of tactical force, and provide the means by which tactical successes are exploited to achieve strategic objectives.[8]
>
> Tactical Level of War. The level of war in which battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives.[9]

From the perspective of the operational commander, the strategic level of war defines his area of

operations (AOR), provides his resources, and places limitations on the use of his forces. Although the operational commander has input into the formulation of the direction provided by the strategic commander, these directions are dictated to him. From the strategic commander's directions the operational commander establishes the military conditions that achieve the strategic commander's objectives. In turn, he provides the same type of directions to the tactical level commanders subordinate to him.

For the operational commander, his military objectives are accomplished as a result of the victorious battles and engagements his tactical units fight. The tactical forces that execute these battles and engagements do so under a doctrine developed by their specific service. The service doctrine provides the basis for organizing, equipping, and training the tactical forces of that particular service. For example, the US Army's doctrine manual, FM 100-5, furnishes the basis for the "tactics, techniques, procedures, organizations, support structure, and training" of all tactical units in the US Army.[10] The service chief directs formulation of service doctrine. In short, the operational commander, who fights the tactical units, does not have significant input into service doctrine. More importantly, he does not have input to the tactical training that prepares tactical

units to execute battles and engagements in support of his operational plans.

This disconnect between the "war fighter's" requirements and the "trainer's" standards highlights a deficiency in US operational design. The operational commander "sets achievable, specific tactical objectives for tactical commanders."[11] How can an operational commander, such as a commander-in-chief (CINC), set achievable, tactical objectives, if he has no training oversight with regard to the units likely to come under his control? Some might note that the component commander provides the CINC with command and control, as well as, service expertise concerning his component's forces under the CINC. This is perfectly true. However, the component commander does not possess the authority for training oversight regarding forces likely to be allocated to the CINC.

A short review of four contingency operations conducted over the last forty years raises the question of the relevance of the CINC primarily due to this disconnect regarding training. In Lebanon in 1958, the Dominican Republic in 1965, Grenada in 1983, and Panama in 1989, the operational CINC's all required operational commanders inserted under them who had familiarity and expertise with the capabilities of the tactical units involved.[12] In three of the four

operations, the CINC was from a different service than the predominant force achieving his military objectives.[13]

Other operational level operations conducted during the same period, such as Desert One and the Mayaguez Incident, demonstrated that the linkage between tactical training and operational execution was broken. Additionally, the same operations indicated that the linkage between the operational and strategic levels regarding training also required repair. Since 1986 the Joint Chiefs of Staff (JCS) have made efforts to remedy at least one of these problems.

As a result of this past military ineptitude, the US Congress passed Public Law 99-433, more commonly known by its title, the "Goldwater-Nichols Department of Defense Reorganization Act of 1986." The purpose of this act was to overcome parochialism between the services through the redistribution of power within the military bureaucracy. In short, the Chairman of the Joint Chiefs of Staff (CJCS) acquired the requisite power to focus the efforts of the US Armed Forces.

The "Goldwater-Nichols Act" requires the CJCS to maintain a Joint Training Program.[14] CJCS MEMORANDUM OF PLANNING NO. 26 (CJCS MOP 26) establishes the Joint Training Program and defines its scope as all matters related to "the training of the armed forces."[15] Each

CINC is required to document joint training requirements through the development of Joint Mission Essential Tasks Lists (JMETL).[16] In reality this program provides a mechanism to ensure that all operational staffs are evaluated and furnished feedback regarding mandated staff exercises. It also securely links the strategic staff to its subordinate operational level staffs. However, CJCS MOP 26 does not impact on the CINC's capability to have training oversight concerning the tactical units likely to execute his operational plans.

The change in the forward deployed status of US forces throughout the world increases the need for a closer link between operational planning and tactical training. As the number of forward deployed US Army divisions shrinks from six plus to three, the number of divisions not assigned to CINC's increases. This simply means that CINC's will execute their plans with tactical units trained to meet general training standards and not necessarily OPLAN requirements.

Currently, each tactical unit in the US Army from corps down must maintain a Mission Essential Task List (METL) in accordance with FM 25-100. METL is simply a management tool to reduce the number of tasks so that task efficiency rises and effort is not wasted achieving marginal performance in a wide variety of

tasks. The problem that occurs is that evaluation and training on METL tasks is left to the discretion of the training unit. This system provides good results at the expense of training on METL tasks related to operational plans. For example, at the National Training Center (NTC) from 1983 until September 1991 only one unit trained to conduct a deliberate attack on a prepared defense.[17] Units typically conducted the same four missions (hasty attack, hasty defense, meeting engagement, and movement to contact) during every rotation.[18] Since a prepared defense is a likely contingency reality, this demonstrates that tactical training is driven by training standards instead of being driven by the CINC's operational plans.

The purpose of this monograph is to demonstrate that the linkage between the operational and tactical levels of war must not just include planning, but it must also include training oversight and METL approval. Otherwise, failure can likely result when a CINC is assigned forces that are unprepared to conduct tactical operations in support of his operational plans.

This monograph will explore the linkage between operational planning and tactical training through the following steps. First, the criteria for evaluating the thesis will be developed. Second, the works of several theorists applicable to the thesis will be

presented. Third, four historical case studies, the Russo-Finnish War, Operation OVERLORD, the German Peace Offensive of 1918, and the Arab-Israeli War of 1973, will be examined to demonstrate the general reasons for success or failure at the operational and tactical levels. Fourth, the reasons for operational and tactical success will be evaluated using the defined criteria. Lastly, the conclusions and implications will be presented.

II. CRITERIA

> The Blueprint also has applications to doctrine development, **training analysis**, test and evaluation, unit applications such as readiness assessment, and **Operations Plan (OPLAN)** and **Contingency Plan (CONPLAN)** development.[19]

The selection of a set of criteria should provide a clear means for analysis of the thesis. In short, the criteria chosen should be capable of determining whether or not a CINC should have training oversight and METL approval over tactical units likely to execute his operational plans. TRADOC Pam 11-9, Blueprint of the Battlefield, supplies such a framework. This pamphlet defines the operating systems that the US Army recognizes at each of the three levels of war. The Battlefield Operating Systems (BOS) synchronize the "Tactical Level."[20] The Operational Operating Systems (OOS) govern the "Operational Level."[21] The Strategic Operating Systems, which are under development, guide the "Strategic Level."[22] The US Army developed these constructs "specifically to provide a structure for studies and analysis addressing the contribution or value of doctrine, training, leader development, organization, and material to the Army's ability to execute its assigned mission."[23] As operating systems have gained acceptance at the tactical level, they have been formalized to insure synchronization of resources and efforts.

For the purposes of this monograph the Operational Operating Systems (OOS) will be used as criteria. The OOS are defined as follows.

> 1. Operational Movement and Maneuver OOS is the disposition of forces to create a decisive impact on the conduct of a campaign or major operation by either securing the operational advantages of position before battle is joined or exploiting tactical success to achieve operational or strategic results.[24]
>
> 2. Operational Fires OOS is the application of firepower to achieve a decisive impact on the conduct of a campaign or major operation.[25]
>
> 3. Operational protection OOS is the conservation of the fighting potential of a force so that it can be applied at the decisive time and place.[26]
>
> 4. Operational command and control operating system is the exercise of authority and direction by a properly designated commander over assigned operational forces in the accomplishment of the mission.[27]
>
> 5. Operational intelligence OOS is that intelligence which is required for the planning and conduct of campaigns and major operations within a theater (or area) of operations.[28]
>
> 6. Operational support operating system consists of the logistical and support activities required to sustain the force in campaigns and major operations within a theater (or area) of operations.[29]

Based on the definitions and the technology of the times of the case studies, only three of the six OOS will be used as criteria for analysis. The primary reason being that Operational Fires, Operational

Protection, and Operational Support played a neutral role in the case studies of this monograph.

The decision to develop operating systems for the three levels of war evolved from the concept of developing "performance standards necessary for successful Army missions or operations."[30] TRADOC Pam 11-9 states that although the "blueprint is intended to apply to military operations across the operational continuum ... it does not apply to military actions short of war, although many activities related to military actions short of war are contained in the Blueprint."[31] Since "actions short of war" or war preparations is the focus of this monograph, the use of this set of criteria will be extended to a specific "area short of war" - the training of forces. An examination of TRADOC Pam 11-9 and the above definitions illustrates the dependence of the operational commander on the proficiency of his tactical units.

The OOS will be applied as criteria to evaluate the performances of the armies from four case studies. The next chapter will establish a linkage between theory and the criteria for analysis of the case studies. The combination of the criteria and the contributions of theorists from the past and present will provide the lens through which the case studies can be studied.

III. THEORY

> In short a working theory is an essential basis for criticism. Without such a theory it is generally impossible for criticism to reach that point at which it becomes truly instructive - when its arguments are convincing and cannot be refuted.
>
> Clausewitz[32]

An examination of theory will provide a perspective to evaluate the historical case studies. Fortunately, there are numerous theories that examine the critical linkage between operational planning and tactical training. I will use material from the following theorists: Sun Tzu, Frederick the Great, Antoine Jomini, Carl von Clausewitz, William Lind, and Mikhial Tukhachevskiy.

It is safe to believe that Sun Tzu had no concept of the operational level of war. He lived in a time when the commander could survey the entire battlefield, not unlike Frederick the Great. However, just like Frederick, he provides a model of the commander who is not only responsible for the military condition the sovereign desires, but one also responsible for the tactical training of his troops. It is not a coincidence that most translations of Sun Tzu begin with the vignette of training the king's concubines.[33]

Sun Tzu named five fundamental factors governing war: moral influence, weather, terrain, command, and doctrine.[34] Each of these five fundamental factors has

a tie to tactical training. For example, soldiers are in harmony with their leaders when their leaders are competent and have trained them in all types of weather and terrain using wisdom and a proper organization. Sun Tzu also mentions that dispositions (positional advantages) are critical to being a victorious general.[35] The situational possibilities that permit good dispositions provide advantage only if the commander knows the tactical capabilities of his troops. Sun Tzu adds, "if ignorant both of your enemy and yourself, you are certain in every battle to be in peril."[36]

Combined with his belief that change was the only constant in warfare, it is possible to believe that Sun Tzu would be quick to observe that today's CINC's are not responsible for the tactical training that troops allocated to them receive.[37] In his first book, "Estimates," he refers to training several times in tandem with concepts like maneuver and command. This linkage provides a demonstration of the proper relationship between a commander and training.

Frederick the Great paralleled Sun Tzu's emphasis regarding training, in practice as well as in theory. He was famous for attending drill and conducting maneuvers. His personal observations allowed him to understand the capabilities and limitations of his

tactical units. This knowledge allowed him to understand fully the tactical possibilities as defined by the tactical capabilities of his troops. Armed with this personal knowledge regarding the capabilities of his soldiers, Frederick formulated the plans outlined in his Military Instructions. These plans were designed to counter the range of enemy actions that threatened the existence of his state. In short, the operational advantages Frederick accumulated evolved from the emphasis he placed on tactical proficiency through intensive training.

Fifty years later Jomini noted that Napoleonic warfare, with its attendant maneuver and speed, emerged from the implementation of a "Modern System of Marches."[38] This new form of war consisted of marching "twenty-five miles a day, to fight, and then camp in quiet."[39] This organized and disciplined force could only result from well-trained troops, although Jomini makes no specific references to training. However, in Spain where Wellington chose to fight the old style of war, a "war of positions," French forces held no advantage.[40] French troops had trained to fight on the open plains in Central Europe. When Wellington offered only the mountainous terrain on the approaches to Lisbon, French troops did not succeed because their training had not prepared them for what they faced on the battlefield.

The system of marches and wars of position have implications for us today. After 1950, the North Koreans and Chinese chose to fight a war of positions. US mobility advantages were meaningless. A similar mismatch in war preparation occurred in the Arab-Israeli War of 1973 where the Israeli's advantage in maneuver warfare was negated by the Egyptian's preference for a "war of position." The US Army is trained for a "war of marches." As such, we must also be prepared to confront, to fight, and to defeat an enemy who is positionally oriented. Operations that are not maneuver oriented usually require different training for tactical forces. Without the proper training, it is possible that the tactical units will be successful in achieving the operational commander's military conditions.

Clausewitz addressed both training and the engagement. His statement on training and readiness is quoted in FM 100-5, "The whole of military activity must therefore relate directly or indirectly to the engagement. The end for which a soldier is recruited, clothed, armed, and trained, the whole object ... is simply that he should fight at the right place and the right time."[41] Clausewitz stated that although peacetime training maneuvers were at best a feeble substitute for the real thing, they did confer an advantage over those whose training is confined to

routine, mechanical drill.[42] By incorporating both training and engagements, Clausewitz attached importance to the linkage between the two. The implication is that training prepares a tactical unit for engagements.

Clausewitz addressed the concept of successive operations in his discussions concerning strategy. His "strategy" is analogous to our operational level of war. Clausewitz stated that strategy consisted of a series of engagements, executed to achieve a military condition.[43] He defined engagements as those tactical actions executed within sight of the tactical commander.[44] These tactical engagements became the building blocks of operational level operations. Without tactical success, operational success, as a general rule would be a rare occurrence.

William Lind addresses the subject of training by espousing a new generation of tactics to ensure freedom of maneuver. As a proponent of maneuver warfare, he believes that excellence in operational art is more important than excellence in tactics.[45] His beliefs run counter to the other theorists and US joint doctrine which state that tactical battles and engagements are the building blocks of operational success. Lind sees training as a process where leaders are trained through exercises that possess a large

amount of friction. [46] He recommends that these exercises take place with entire units so that tactical proficiency results.[47] Lind's concepts parallel the Soviet's requirements in their doctrine, for creativity in operational art and initiative at the tactical level.

Mikhial Tukhachevskiy, the creator of Soviet "deep operations" theory, clearly understood the linkage between operational planning and tactical training. He recognized, like Clausewitz, that successive, combined arms operations conducted against the depths of the enemy's operational formations would lead to success.[48] Creativity drove operational level of war operations, while training standardization focused tactical efforts.[49] This allowed the tactical commander to perform in a known fashion so that uncertainty could be reduced for the operational commander. This concept alone forced Soviet operational commanders to assume responsibility for the training of their tactical units. Only a keen interest in peacetime training and wartime tactical performance could produce the tactical "norms" that were critical to the calculation of operational possibilities.[50]

Each of these theorists also provide support for the criteria selected for evaluation of the historical case studies. Each theorist supports Operational

Movement and Maneuver OOS to attain advantage for the tactical battle. For example, Jomini's "Fundamental Principle of War" dictates movement as the primary means to achieve tactical advantage.[51] The key to movement, for Jomini, was the recognition of decisive points to move towards.[52] This parallels Sun Tzu's fundamental factor, terrain. Both imply a knowledge of the area of operations to recognize decisive points and to facilitate movement. These examples support the Operational Intelligence OOS. Operational Command and Control OOS is supported by the emphasis Tukhachevskiy placed on troop control and the simplicity required to conduct Lind's maneuver warfare.

In summary, the theorists describe the necessary linkage between operational planning and tactical training. The most important linkage occurs in the area of training oversight. The four historical case studies reinforce this exact point.

IV. HISTORY

> Historical examples clarify everything and also provide the best kind of proof in the empirical sciences.
>
> Clausewitz[53]

This chapter explores four historical case studies to provide a better understanding of the important linkage between operational planning and tactical training. Four combinations can occur when examining operational and tactical events. The matrix below provides a case study to each of the four combinations.

		OPERATIONAL	
		SUCCESS	FAILURE
TACTICAL	SUCCESS	Arab-Israeli War 1973	The Peace Offensive 1918
	FAILURE	Operation OVERLORD 1944	Russo-Finnish War 1939

The first case study concerns the Russo-Finnish War of 1939. This war exemplifies tactical and operational failure for the Soviets in its initial phase. The final results, however, were completely favorable to the Soviet Union. Since this monograph focuses on the linkage between operational planning and tactical training, the initial phase is the most important to this study. Michael Howard, mentioned, "that whatever doctrine the Armed Forces are working on now, they have got it wrong. ... it does not matter

that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives."[54] The Soviets began this war with a doctrine, which constituted the basis for training, that was flawed at both the tactical and operational levels.

On October 31, 1939, Molotov outlined the security objectives of the Soviet Union after the Polish question had been settled.[55] Finland represented one of the USSR's most serious concerns. Molotov wanted Finland to lease the Port of Hango and to trade territory near Leningrad and Murmansk. In return the Soviets would cede twice the amount of land asked for and would pay for the basing rights in Hango.[56] For the USSR this proposal would secure its largest manufacturing center, Leningrad, as well as, securing its northern borders with Finland.

After Finnish rejection of these demands, the Soviet Union attacked on November 30, 1939. The military condition desired by the Soviet Union was a prostrate Finland that would accede to the Soviet's demands. The means of achieving this military condition was a broad front attack using overwhelming mass. For the Soviets this made sense because they could attack with one million troops against 300,000 Finnish regulars assisted by 100,000 reservists.[57]

Since the regular Finnish troops were stationed on the Karelian Isthmus, the Soviets hoped to overwhelm the reservists north of Lake Ladoga.

The first phase of the war was an unmitigated Soviet disaster. The Soviets defeated neither the regulars nor the reservists. On the isthmus, Soviet troops could not penetrate the Mannerheim Line, an organized defensive position. North of Lake Ladoga the Soviet formations penetrated too deeply to be supported, were cut off by Finnish ski troops, and destroyed.

In short, the Soviets, hampered by the lack of a prepared operational and tactical doctrine, could not compete against the Finns. Their doctrine, which provided the basis for their training and organization, was flawed. Simply put, the Soviet forces were too poorly trained and organized to win the battles and engagements required for operational success.[58] They could not successfully conduct offensive operations in the winter against a prepared defensive position.

These problems regarding training and organization resulted from fallout from two significant events. First, the purges of 1936-1937 either eliminated many innovative thinkers and trainers or it caused others to keep quiet.[59] Second, the Spanish Civil War, in which the Soviets participated, combined with the purges to

change the tactical and operational direction of the Soviet Army.[60] During the period 1937-1939 the Soviet Army developed a mental paralysis that neither fostered innovation nor the necessary linkage between operational planning and tactical training.

The result of this paralysis wasted the tremendous gains of the 1920's and 1930's. The Soviet Army had worked hard studying lessons derived from its performance during World War I, its Civil War, the 1920 Polish War, and specific operations of the other *Entente* Powers during the Great War.[61] Several lessons emerged. First, the army that mobilized fastest gained the initiative.[62] Second, mechanization provided the mobility to exploit tactical opportunities.[63] Finally, operations had to couple breakthrough and deep pursuit so as to destroy the enemy throughout the depth of his operational formations through the use of combined arms action.[64]

Between 1922 and 1936, the Soviets formulated doctrine for offensive operations. Faced with threats from the Far East, Turkey, Germany, and also internally, the Soviets used the scientific dialectic approach to understand and prepare for future war. The essence of war consisted of combined arms operations conducted at all levels with the single purpose of

attacking the enemy throughout the depth of his operational formations.

The obstacles to mastering this operational level of war problem were threefold. First, deep operations required complete mechanization of the army.[65] Second, the synchronized use of these large mobile formations called for advances in "troop control."[66] Finally, since creativity was required at the operational level only, a unified tactical doctrine had to be developed.[67] If any of these three items were neglected, failure would result.

The impact of the purges and the Spanish Civil War experience insured neglect. The death of Tukhachevskiy guaranteed that development of deep operations theory and doctrine would halt. The Soviet "volunteer's" experience in the Spanish Civil War cinched the demise of large mechanized combined arms formations necessary for breakthrough and pursuit operations. Large mechanized maneuver never appeared in Spain. Consequently, the Soviets reorganized their mechanized forces into smaller formations that contributed little during the Russo-Finnish War and more importantly during Barbarossa fifteen months later. With doctrinal concepts in disarray, failure resulted from the lack of tactical training to win engagements. Consequently, successful operations were not possible.

The Soviet General Staff analyzed the failure during the first phase of the Russo-Finnish War and retrained and reorganized.[68] Revival of Tukhachevskiy's deep operations theory provided a solution to previously poor operational planning. Tactical training improved slowly within the framework of troop control reforms and unit reorganizations. In short, the Soviet failure to link operational planning to tactical training, brought failure in Finland during the first phase of the war. Once they linked the two concepts, success came quickly in February 1940.

Operation OVERLORD, the second case study, is an illustration of tactical failure and operational success. From the Allied perspective, the military condition needed was a secure lodgment on the European mainland. The preparations for this operation at the operational level left out few details. The operational commander's planning staff did nearly everything to insure operational success except to insure a close linkage to the tactical training required for expansion of the lodgment.

Operational preparations included finding a landing site that had the proper characteristics: first, to avoid the main German defenses; second, to have protected beaches; third, to have a reasonable road network to support inland movement; fourth, to

have terrain conducive to maneuver beyond the landing site; fifth, to be outside the English Channel area so that the landing armada would not be constricted with regard to sea space; and lastly, to be as far from Germany as possible to reduce the German aircraft threat.[69]

The operational planners selected a site that met all of the above criteria. However, the problem manifested itself in the lack of attention to tactical training for operations beyond the beachhead. Whereas operational support equipped this operation to ensure operational success, the same considerations were not extended to the tactical level. The training necessary to win the initial battles and engagements in the *bocage* was absent.

The area that kept the Allies from breaking out of the beachhead is called the *bocage*. The small fields of the region are surrounded by hedgerows that have grown out of the walls built from rocks removed from the fields. Jomini mentioned this region as a good place to construct a formidable defense.[70] The operational planners even noted that the small fields with their irregular patterns might be good places to establish logistic points.[71] Brigadier General Gavin stated, "although there had been some talk in the U.K. before D-Day about the hedgerows, none of us had really

appreciated how difficult they would turn out to be."[72] At the company level, Captain Folsom of the 83rd Infantry Division, admitted, "that preinvasion training had "not taken tne hedgerows into consideration.""[73] These comments illustrate the point that the operational planners, while fixated on the difficult and critical aspects of the landing, failed to prepare for the tactical battles beyond the beaches. This disconnect between operational planning and tactical training cost 100,000 casualties over two months before a breakout of the lodgment was possible.[74]

The Allied tactical formations were organized and trained for mobile warfare. They had practiced exploiting the advantages of their mechanization in Africa and Sicily. American divisions (with three regiments) were designed for ease of control in mobile warfare.[75] During World War I, they had been organized to sustain mass (with four regiments) in positional warfare.[76] However, the problem in 1944 was that the operational arrow in OVERLORD had tactical forces, trained and organized for mobile war, traversing terrain that favored a positional defense.

An unassailable Allied lodgment resulted from this operation. The tactical costs of the operation created personnel shortages for the Allies as divisions solved the tactical problems associated with positional

warfare. For example, in less than two months several divisions were down to less than fifty percent of their rifleman strength at the company level.[77] The operational planners could have reduced this problem by training forces to fight in the peculiar environment of the *bocage*. Then to reinforce tactical success through the hedgerows, they could have introduced mobile forces to exploit the breakout.

The third case study, the German Peace Offensive of 1918, examines tactical success and operational failure. The military condition desired by the initial phase of this operation was the destruction of the British Expeditionary Force (BEF).[78] What allowed the Germans to conduct their first Western Front offensive successfully in two years were "stormtroop" tactics and troops freed up from the Russian Front. The mobility inherent in operations executed in Russia, Rumania, and Italy fostered the development of the tactical initiative as the key to tactical and, subsequently, operational success.

The German General Staff analyzed the lessons and developmental techniques needed to train units for the Peace Offensive. Training for the assault troops and the artillery required the most attention. The "stormtroop" tactics, used in 1917 in Riga, Rumania, and Italy, created the probability of a penetration

that could be exploited by mobile operations throughout the depth of the enemy's operational formations.[79] For the artillery, precise mathematical calculations applied individually to each of the six thousand guns supporting the operation insured accurate fire in support of the attack.[80] Tactical training preparations ensured tactical success, but were not enough to overcome operational deficiencies.

The operational stalemate on the Western Front resulted from the inability of a tactical success to overcome the enemy's operational capability to contain it. In sum, short of one army disintegrating, operational success could not be gained because operational reserves could stop any tactical success from being exploited.[81] In World War II mechanization provided tactical units with the speed required to move quicker than the operational reserves. This simple change made the probability of a stalemate much lower.

The Peace Offensive began on March 21, 1918. Although it enjoyed initial tactical success, as manifested in the destruction of the Fifth British Army, the German CINC, Ludendorff, did not use his operational armies to advantage. By retaining centralized command and control, he precluded his army commanders from taking advantage of opportunities as they occurred.[82] This failure to understand the nature

of operational maneuver, coupled with the failure to use the window of opportunity provided by tactical success, allowed the Allied forces to contain the Germans.[83] In short, the German offensive succeeded tactically, but failed operationally. The critical linkage between operational planning and tactical training was flawed by too much emphasis on tactical possibilities and too little weight given to operational design.

The final case study combines tactical and operational success. The Arab-Israeli War of 1973 demonstrates the proper linkage between operational planning and tactical training. The military conditions necessary for Egyptian success consisted of three requirements: first, infliction of a tactical defeat on the Israeli Defense Force (IDF);[84] second, conduct of defensive combined arms operations to negate the IDF's superiority in the execution of mobile warfare;[85] and third, presentation of a possible long term conflict to the Israelis that held the promise of depression, if not destruction, of their economy.[86]

Planning to obtain these conditions, LTG Saad El Shazly, the Egyptian CINC, insured that the plan linked tactical objectives to operational objectives. He presided over the details of tactical training like engineer breaching techniques, the individual load of

the assault troops, and the employment of air defense weapons.[87] This level of attention to detail concerning tactical training ensured that his subordinate tactical commanders trained only on mission essential tasks that were critical to his operational plan.

LTG El Shazly's operational plan guided the development of this limited offensive operation.[88] The student of history might fault this analysis based on the perceived outcome of the war. In fact, this plan achieved operational success until it was stretched beyond its means by President Sadat.[89] However, in the final analysis, the aforementioned military conditions were achieved. As such, this campaign is a model of the importance of the operational commander having oversight regarding tactical training and METL approval.

These four case studies have covered the salient points regarding relevance to the thesis. The first three case studies established that a poor linkage between tactical training and operational planning resulted in lost battles and engagements and consequent failure to achieve the desired military conditions. The last case study demonstrated that an army that ensures that tactical training supports operational planning will undoubtedly succeed. To further examine

these case studies, an analysis follows using the OOS as introduced in the criteria chapter.

V. ANALYSIS

> A critic should therefore not check a great commander's solution to a problem as if it were a sum in arithmetic. Rather, he must recognize with admiration the commander's success, the smooth unfolding of events, the higher workings of genius.
>
> Clausewitz[90]

Analysis of these four case studies involves a comparison of the events to the established criteria. The results of the comparison, subsequently, either support or do not support the thesis. In this monograph the Operational Operating Systems provide a framework that is not only useful but appropriate. The US Army has adopted the OOS to describe the combat activities that occur at the operational level of war.[91] In this analysis, only three of the six OOS will be applied to the case studies. The reason for the exclusion of Operational Fires, Operational Protection, and Operational Support is that they either did not exist technologically or they maintained a neutral position for each of the combatants.

Operational Movement and Maneuver

Operational Movement and Maneuver OOS, as defined in Chapter II, focuses on gaining a positional advantage either before the battle is joined or exploiting tactical success. This OOS has two subfunctions that are key to this analysis.

1.3.1 Overcome operationally significant obstacles.[92]
1.5 Control operationally significant area.[93]

Both of these subfunctions require a secure linkage between operational planning and tactical training. The Soviets in Finland and the Allies in OVERLORD could not overcome operationally significant obstacles without major reorganization and retraining at the tactical level. The same two armies had difficulties in controlling an operationally significant area because tactical training did not support operational planning through victorious battles and engagements. The operational plans were sound. However, the operational commanders did not insure that their subordinate commanders trained on METL that supported operational maneuver. In both cases, if tactical training had not improved to support the operational plan a stalemate would have been likely.

The Peace Offensive is a separate case regarding these two subfunctions. Solving the operationally significant obstacle fit the capabilities of the trained "stormtroop" units. But, the speed of their tactical maneuver could not break into the operational depth of the Allied lines before Allied reserves restored the integrity of the trench lines. Training could not have resolved this situation. Technology that was unavailable at the time or disintegration of

one of the armies represented the only paths to victory.

The Egyptians executed their operational plan successfully because they trained tactically to overcome operationally significant barriers and to control an operationally significant area. The CINC influenced his subordinates training to ensure that their preparations supported his operational plan. Without this linkage between the Egyptian CINC and his subordinates, this operational plan would never have crossed the canal.

In sum, these two subfunctions are combat activities that can best be accomplished when the operational commander has training oversight and METL approval.

Operational Intelligence

Operational Intelligence OOS, as described in Chapter II, focuses on identifying and locating the enemy's center of gravity so that it can be targeted and defeated. This OOS has one subfunction that is key to this analysis.

5.2.2 Analyze the area of operations.[94]

The first three case studies highlighted significant disconnects concerning this subfunction between the operational plan and tactical unit

training. The Soviets could not overcome either the Mannerheim Line or the trackless lake country north of Lake Ladoga. The tactical training had not prepared them for attacks on a prepared defense or the nonlinear combat in eastern portions of Finland. During OVERLORD, the Allies did not appreciate the impact the *bocage* would have on mobile operations. Although they recognized the obstacle's existence, they did not see its significance. Likewise, the Germans in 1918 did not understand the nature of the terrain behind the Allied lines. Once the "stormtroops" had broken through the first line of the BEF, the populated region with numerous towns and cities provided just enough organized resistance to allow operational reserves to arrive before the Germans.

The Egyptians, however, made both an art and a science of their study of the area of operations. Instead of viewing it as an area for drawing operational arrows, they saw it as an area that demanded specific tactical training to master it. Once they discovered the proper training to perform, they then refined their operational plan and ensured that only METL training was conducted.

In short, this subfunction describes a combat activity that is crucial to operational success. The operational commander will draw his operational

maneuver arrow precisely where it should go to attack the enemy's center of gravity. He must then insure that his tactical commanders train on the METL that supports his operational plan.

Operational Command and Control

Operational Command and Control OOS, as defined in Chapter II, focuses on arrangement of resources in planning, directing, controlling, and coordinating forces in the conduct of campaigns. This OOS has one function that is key to this analysis.

4.3 Determine operational actions.[95]

This function describes a combat activity that can only be successfully achieved if the operational planner has securely linked operational planning to tactical training in the three subfunctions covered above. The first three case studies illustrate the disconnect that occurred when the operational planners did not determine their operational actions based on their tactical unit's capabilities. As a result their tactical formations were not trained for the required operations. The outcome was failure to lay the foundation for successful operational level operations. Conversely, the Egyptians determined operational actions based on specific tactical capabilities. They trained to insure that the tactical units could do the

tasks needed to win battles and engagements that supported the operational plan.

This analysis of each case study and the criteria for evaluation provides a number of conclusions. First, the operational maneuver desired by the CINC can only be executed by tactical units trained to conduct the specific operations required. Second, the analysis of the area of operations provides training requirements for which the CINC must insure his tactical units train. And third, the CINC's operational actions can only be accomplished by units that have conducted tactical training designed to support the CINC's operational plan. These conclusions generate implications for the US Army as it faces the future.

VI. IMPLICATIONS AND CONCLUSIONS

> Then, battle is the means of the operation.
> Tactics are the material of operational art.
> A.A. Svechin[96]

The conclusions drawn from the analysis in the previous chapter contribute three implications for the US Army as it faces the future. First, the simple fact that there are three levels of war makes the CINC, the operational commander, a man torn in two opposite directions. JCS Pub 3-0 clearly identifies the CINC's multitude of responsibilities regarding the linkage he must maintain between the operational and strategic levels of war. But, there is no explicit reference to his requirement to maintain the linkage between the operational and tactical levels of war. The case studies provided evidence that the CINC should have training oversight and METL approval concerning the units that will execute his OPLAN. Without this oversight, the CINC either hopes that the forces are ready to go as is or he hopes that he has the time to train units as they arrive in theater. Does anyone want hope to play such a large part in operational success? The answer to this problem is to let national security documents prioritize the CINC's based on intelligence collection. The CINC's with the highest priority can reach down to the tactical commanders, through their component commanders, to provide

oversight and METL approval on tactical training that supports their OPLAN.

The second implication involves the transfer of additional power from the service chiefs to the CINC's. Currently, the service chiefs are responsible for generic training, equipping, and manning their respective services. The CINC is responsible for "maintaining the preparedness of the command to carry out missions assigned to the command."[97] The quandary apparent in these two divergent statements is obvious. The solution is to require the CINC to have oversight and METL approval regarding tactical training for those units likely to be assigned to execute his OPLAN. This implication does not reduce the responsibility of the Service Chief, rather it simply ties the CINC closer to synchronization of all three levels of war. This reflects the direction of Goldwater-Nichols.

The final implication concerns the joint nature of the operational level of war. The CINC, once given oversight and METL approval over units likely to be assigned to him, could insure that tactical joint operations took place, not as an exception but as a rule. For example, USMC, US Army, and USAF units could "fight" together at the NTC or other JCS directed FTX's and solve problems regarding interoperability and

doctrine which could result in increased efficiency and decreased fratricide.

These three implications also find a solid basis in the theory provided and the criteria selected for evaluation. Support from the selected theorists illustrate the need for the commander to have oversight regarding tactical training. According to Sun Tzu, without this simple power the commander could never "know himself" and the consequence would be peril in every engagement. Clausewitz supports training oversight by demonstrating the need for peacetime training that is more than routine. Service chiefs currently provide generic, service oriented training that is typically not joint. The CINC could require forces to train as they will execute - jointly. The OOS support the implications through the analysis of the case studies which demonstrate that the CINC will probably not achieve his desired military conditions without oversight regarding tactical training. The tactical actions that must occur to support his operational plan must form the METL for those tactical units likely to execute his plans.

In conclusion, the CINC needs to have an oversight responsibility for the forces that are likely to be assigned to execute his CONPLAN's or OPLAN. National security documents are sufficient to determine which

CINC should have priority over specific tactical units during a given period of time. The CINC could then insure the tactical units are training on METL that are critical to his operational plans. This type of operational-tactical interface is supported by both theory and history and would be a logical extension to the increasing responsibilities of the CINC's.

Notes

1. Doubler, Michael. Busting the Bocage: American Combined Arms Operations in France, 6 June-31 July 1944. (Fort Leavenworth: Combat Studies Institute., 1988.) p. 21.

2. FM 100-5, Operations. (Washington, D.C.: HQ Department of the Army., 1986.) p. 10.

3. Ibid.

4. Ibid.

5. Ibid.

6. Ibid.

7. JCS PUB 3-0, Doctrine for Unified and Joint Commands. (Washington, D.C.: The Joint Chiefs of Staff., 1991.) p. xiii.

8. Ibid.

9. Ibid. p. xiv.

10. FM 100-5. p. 6.

11. TRADOC Pam 11-9. Blueprint of the Battlefield. (Fort Monroe, VA: HQ US Army TRADOC., 1990.) p. 6.

12. Yates, Lawrence. Untitled briefing regarding LIC Contingency Operations. (Fort Leavenworth: School of Advanced Military Studies., April 3, 1991.)

13. Ibid.

14. Joint Training Program. CJCS Memorandum No. 26. (Washington, D.C.: Chairman, The Joint Staff. Dated: 6 August 1990.) p. 1.

15. Ibid.

16. Ibid. p. 8.

17. Dagostino, John. US Army National Training Center, Plans and Operations Division. Telephone interview regarding historical data on the types of missions assigned during unit rotations. October 15, 1990.

18. Ibid.

19. TRADOC Pam 11-9. p. 40.

20. Ibid. p. 4.

21. Ibid.

22. Ibid. p. 12.

23. Ibid. p. 1.

24. Ibid. p. 12.

25. Ibid.

26. Ibid. p. 13.

27. Ibid.

28. Ibid. p. 14.

29. Ibid. p. 15.

30. Ibid. p. 1.

31. Ibid.

32. Clausewitz, Carl v. On War. Edited and translated by Michael Howard and Peter Paret. (Princeton: Princeton University Press., 1984.) p. 157.

33. Sun Tzu. The Art of War. Translated by Samuel Griffith. (New York: Oxford University Press., 1971.) p. 57.

34. Ibid. p. 63.

35. Ibid. p. 88.

36. Ibid. p. 84.

37. Ibid. p. 10.

38. Jomini, Antoine. The Art of War. Translated by G. H. Mendell and W.P. Craighill. (Westport, CT: Greenwood Press Publishers., 1862.) p. 123.

39. Ibid. p. 125.

40. Ibid. p. 324.

41. Clausewitz. p. 95.

42. Ibid. p. 122.

43. Ibid. p. 128.

44. Ibid.

45. Lind, William. Maneuver Warfare Handbook. (Boulder, CO: Westview Press., 1985.) p. 24.

46. Ibid. p. 45.

47. Ibid. p. 46.

48. Kipp, Jacob. Mass, Mobility, and the Red Army's Road to Operational Art. (Fort Leavenworth: Soviet Army Studies Office., 1988.) p. 21.

49. Ibid. p. 11.

50. Ibid. p. 21.

51. Jomini. p. 63.

52. Ibid.

53. Clausewitz. p. 170.

54. Howard, Michael. "Military Science in an Age of Peace." P671 Text. (Fort Leavenworth: Command and General Staff Officer's Course., 1989-1990.) p. 262.

55. Werth, Alexander. Russia at War, 1941-1945. New York: Carroll & Graf Publishers, Inc., 1964.) p. 64.

56. Stokesbury, James. A Short History of World War II. (New York: William Morrow and Company, Inc., 1980.) p. 80.

57. Ibid. pp. 80-81.

58. Donnelly, Christopher. Red Banner. (Alexandria, VA: Jane's Publishing Inc., 1988.) p. 77.

59. Kipp, Jacob. The Spanish Civil War and the Politics of Future War: The Red Army's Assessment of War Experience and the Fate of Deep Operations. (Fort Leavenworth: Soviet Army Studies Office., 1990.) p. 2.

60. Ibid. p. 17.

61. Kipp. Mass. pp. 18-19.

62. Ibid. p.3.

63. Ibid. p. 21.

64. Ibid. p. 19.

65. Ibid. p. 23.

66. Ibid. p. 12.

67. Ibid. p. 10.

68. Donnelly. p. 77.

69. Davies, Arthur. "Geographical Factors in the Invasion and Battle of Normandy." (Geographic Review. Vol. XXXVI., October 1946.) pp. 614-615.

70. Jomini. p. 27.

71. Davies. p. 618.

72. Doubler. p. 21.

73. Ibid. p. 21.

74. Ibid. p. 61

75. Weigley, Russell F. History of the United States Army. (New York: Macmillan Publishing Co. Inc., 1967.) p. 424.

76. House, Jonathan. Towards Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organizations. Research Survey No. 2. (Fort Leavenworth, KS: Combat Studies Institute., 1984.) p. 42.

77. Doubler. p. 61.

78. Gudmundsson, Bruce. Stormtroop Tactics: Innovation: in the German Army, 1914-1918. (New York: Praeger Publishing., 1989.) p. 154.

79. Ibid. p. 121.

80. Ibid. p. 161.

81. Ibid. p. 178.

82. Ibid. p. 158.

83. Ibid. p. 168.

84. EL Shazly, Saad. The Crossing of the Suez. (San Francisco: American Midwest Research., 1980.) p. 27.

85. Ibid. p. 25.

86. Ibid. p. 26.

87. Ibid. pp. 26, 53, 57.

88. Ibid. p. 245.

89. Ibid. p. 247.

90. Clausewitz. p. 165.

91. TRADOC Pam 11-9. p. 1.

92. Ibid. p. 43.

93. Ibid.

94. Ibid. p. 49.

95. Ibid. p. 47.

96. Kipp. Mass. p. 18.

97. JCS Pub 3-0. p. I-1.

BIBLIOGRAPHY

Books

Adan, Avraham. On the Banks of the Suez. San Francisco: Presidio Press., 1980.

Bellamy, Chris. The Future of Land Warfare. New York: St. Martin's Press, Inc., 1987.

Clark, Asa, et al, ed. The Defense Reform Debate. Baltimore: John Hopkins University Press., 1984.

Clausewitz, Carl v. On War. Ed. and trans. by Michael Howard and Peter Paret. Princeton: Princeton University Press., 1984.

Cohen, Eliot and John Gooch. Military Misfortunes: the Anatomy of Failure. New York: The Free Press., 1990.

Cooper, Matthew. The German Army 1933-1945. Chelsea, UK: Scarborough House., 1978.

Donnelly, Christopher. Red Banner. Alexandria, VA: Jane's Publishing Inc., 1988.

Dupuy, T.N. Understanding War. New York: Paragon: House Publishers., 1987.

EL Shazly, Saad. The Crossing of the Suez. San Francisco: American Midwest Research., 1980.

Fuller, J.F.C. Armored Warfare. Harrisburg, PA: The Military Publishing Company., 1943.

Griffith, Paddy. Forward into Battle. Sussex, UK: Antony Bird Publications., 1981.

Gudmundsson, Bruce. Stormtroop Tactics: Innovation: in the German Army 1914-1918. New York: Praeger Publishing., 1989.

Herzog, Chaim. The Arab-Israeli Wars. New York: Random House., 1986.

Jomini, Antoine. The Art of War. Trans. by G. H. Mendell and W.P. Craighill. Westport, CT: Greenwood Press Publishers., 1862.

Keegan, John. The Mask of Command. New York: Viking Penguin Inc., 1987.

Lind, William. Maneuver Warfare Handbook. Boulder, CO: Westview Press., 1985.

Livesey, Anthony. Great Battles of World War I. New York: MacMillan Publishing Company., 1989.

Luttwak, Edward. The Pentagon and the Art of War. New York: Simon and Schuster Inc., 1985.

Luvaas, Jay. ed. and trans. Frederick the Great on the Art of War. New York: The Free Press., 1966.

Lyons, Graham, ed. The Russian Version of the Second World War. Marjorie Vanston, trans. New York: Facts on File Publications., 1976.

Paret, Peter. ed. Makers of Modern Strategy. Princeton: Princeton University Press., 1986.

Phillips, T. R. ed. Roots of Strategy. Harrisburg, PA: Stackpole Books., 1985.

Posen, Barry. The Sources of Military Doctrine. Ithica: Cornell University Press., 1984.

Simpkin, Richard. Race to the Swift. New York: Brassey's Defence Publishers., 1985.

Sun Tzu. The Art of War. Trans. by Samuel Griffith. New York: Oxford University Press., 1971.

Stokesbury, James. A Short History of World War II. New York: William Morrow and Company, Inc., 1980.

Triandafillov, V. Nature of the Operations of Modern Armies. Trans. by William Burhans. Woodbridge, VA: RUSS-ENG Translations, Inc., 1929.

Tukhachevskiy, Mikhial. New Problems in Warfare. Carlisle, PA: US Army War College., 1983.

Van Creveld, Martin. Command in War. Cambridge, MA: Harvard University Press., 1985.

Vigor, P.H. Soviet Blitzkrieg Theory. New York: St. Martin's Press., 1988.

Weigley, Russell F. History of the United States Army. New York: Macmillan Publishing Co. Inc., 1967.

Werth, Alexander. Russia at War, 1941-1945. New York: Carroll & Graf Publishers, Inc., 1964.

Articles and Monographs

Bush, George. National Security Strategy of the United States. Washington, D.C.: The White House., 1990.

Davies, Arthur. "Geographical Factors in the Invasion and Battle of Normandy." Geographic Review. Vol. XXXVI., October 1946.

Doubler, Michael. Busting the Bocage: American Combined Arms Operations in France, 6 June-31 July 1944. Fort Leavenworth: Combat Studies Institute., 1988.

Glantz, David. The Soviet View of Future War. Fort Leavenworth: Soviet Army Studies Office., 1989.

House, Jonathan. Towards Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organizations. Research Survey No. 2. Fort Leavenworth, KS: Combat Studies Institute., 1984.

Howard, Michael. "Military Science in an Age of Peace." P671 Text. Fort Leavenworth: Command and General Staff Officer's Course., 1989-1990.

Kipp, Jacob. Barbarossa, Soviet Covering Forces, and the Initial Period of War; Military History and AirLand Battle. Fort Leavenworth: Soviet Army Studies Office., 1989.

Kipp, Jacob. Mass, Mobility, and the Red Army's Road to Operational Art. Fort Leavenworth: Soviet Army Studies Office., 1988.

Kipp, Jacob. The Spanish Civil War and the Politics of Future War: The Red Army's Assessment of War Experience and the Fate of Deep Operations. Fort Leavenworth: Soviet Army Studies Office., 1990.

Lupfer, Timothy. The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War. Research Survey No. 4. Fort Leavenworth: Combat Studies Institute., 1981.

Menning, Bruce. Train Hard, Fight Easy: The Legacy of A.V. Suvorov and His "Art of Victory." Fort Leavenworth: Soviet Army Studies Office., 1988.

Vuono, Carl. The United States Army: A Strategic Force for the 1990's and Beyond. Washington, D.C.: Chief of Staff of the Army's Office., 1990.

Vuono, Carl. "Training and the Army of the 1990's." Military Review. Fort Leavenworth: Command and Staff College., January 1991.

Field Manuals

AFSC PUB 1, The Joint Staff Officer's Guide 1991. Norfolk, VA: National Defense University,. 1991.

FM 25-100, Training. Washington, D.C.: HQ Department of the Army., 1989.

FM 100-5, Operations. Washington, D.C.: HQ Department of the Army., 1986.

FM 100-6, Large Unit Operations. Fort Leavenworth: US Army Command and General Staff College., 1987.

FM 100-15, Corps Operations. Washington, D.C.: HQ Department of the Army., 1988.

JCS PUB 3-0, Doctrine for Unified and Joint Commands. Washington, D.C.: The Joint Chiefs of Staff., 1991.

TRADOC Pam 11-9. Blueprint of the Battlefield. Fort Monroe, VA: HQ US Army TRADOC., 1990.

Concept Papers and Briefings

JCS Exercise Program Briefing. Presented by the J7 Directorate. 9 January 1991 in the Pentagon.

Joint Training Program (DRAFT) Memorandum. J7 Directorate, The Joint Staff, Washington, D.C. Dated: 1 March 1991.

Joint Training Program. CJCS Memorandum No. 26. Chairman, The Joint Staff, Washington, D.C. Dated: 6 August 1990.

Yates, Lawrence. Untitled briefing regarding LIC Contingency Operations. (Fort Leavenworth: School of Advanced Military Studies., April 3, 1991.)

Interviews

Dagostino, John. US Army National Training Center, Plans and Operations Division. Telephone interview regarding historical data on the types of missions assigned during unit rotations. October 15, 1990.